TDK RF Solutions Inc.

TDK TestLab™

Software For Emissions Testing, Immunity Testing, EUT Monitoring, and Antenna Pattern Measurements

Product Brief

TDK RF Solutions Inc.

Test System Software

Overview

TDK RF Solutions Inc. offers a suite of software products specifically designed to simplify complex electromagnetic compatibility (EMC) and RF testing. TDK test system software products include radiated and conducted emissions, radiated immunity, conducted immunity, EUT (equipment under test) monitoring, and antenna pattern measurement software. Our test software is designed for taking measurements in an anechoic chamber, shielded room, TEM cell, GTEM, or at an open area test site (OATS).

TDK TestLab™ Software Modules

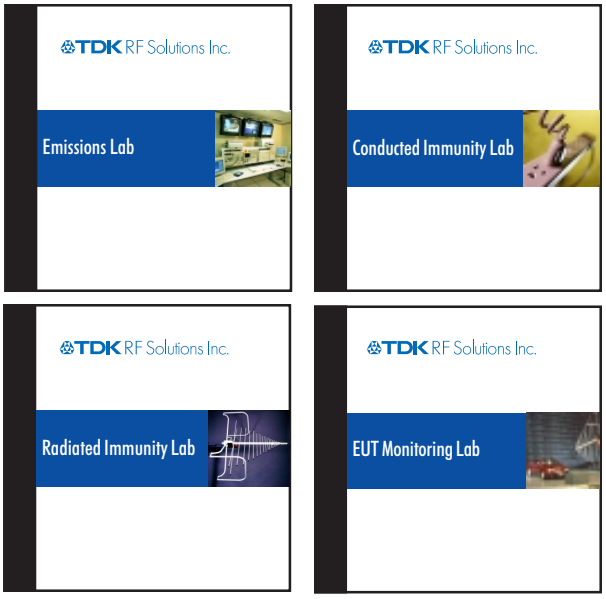
TDK software is designed to perform the measurements most used by EMC test engineers. Specific software package features include:

Emissions Lab TDK Emissions Lab performs both radiated and conducted emissions tests to CISPR, VDE, and FCC regulations and meets requirements for telecommunications, ITE, military, and automotive testing. Emissions Lab performs several test sequences – preliminary scan, final measurements, site attenuation, and amplitude response.

- **Preliminary Scan** Using peak detection, the software takes measurements over a specified frequency range. The software's peak search utility then creates a signal list.
- **Final Measurement** Emissions Lab enables you to identify peaks in the dataset acquired during the preliminary scan and then run this test sequence to perform measurements using peak, quasi-peak, or average detectors at the peak frequencies.
- **Site Attenuation** This test is useful for qualifying OATS and shielded enclosures for making emissions measurements per ANSI specifications.
- **Amplitude Response** Tests the frequency response of a device by varying the input frequency and maintaining a constant power level.

Radiated Immunity Lab TDK Radiated Immunity Lab automates radiated immunity testing by controlling the signal source output levels and monitoring the power levels necessary to generate the required field strength levels over a set of frequencies. Radiated Immunity Lab supports the Substitution, Closed Loop, and Theoretical testing methods. It can also perform field uniformity testing.

Conducted Immunity Lab TDK Conducted Immunity Lab allows you to test your product for immunity to conducted disturbances on its power, signal, or control lines, or test to determine your product's immunity to the complex waveforms of induced bulk cable current (BCI testing).



TDK RF Solutions offers Emissions Lab (radiated and conducted emissions), Radiated Immunity Lab, Conducted Immunity Lab, and EUT Monitoring Lab modules.

EUT Monitoring Lab TDK RF Solutions offers EUT (Equipment Under Test) Monitoring Lab software to acquire data from an EUT via an oscilloscope, a receiver, a spectrum analyzer, a status monitor, or a dynamic signal analyzer. The software can determine the pass/fail status of the EUT by comparing the acquired data against user-defined pass/fail thresholds. EUT Monitoring Lab can acquire and display the following types of data – frequency, duty cycle, DC offset, peak-to-peak voltage, analog voltage, and digital signal. Each of these data values may be compared against thresholds.

Additional Software In addition to the above software, TDK RF Solutions offers software for antenna pattern measurements and video monitoring.

Key Software Features

TDK RF Solutions software is designed to simplify repetitive test procedures. This is accomplished through the test setup process, test automation, and control of test instrumentation.

Test setup All test software modules use the Range Setup window (see Figure 1) to specify test options and configure each piece of equipment used for a test. Once configured, the test setup can be saved for use in the future – eliminating the need to specify instrument options every time the test engineer switches between tests.

Automation TDK software is designed to perform manual, semi-automated, and automated testing based on the test engineer's preference for automation and on requirements identified in the test standards. Automation eliminates common repetitive tasks that are required in EMC test procedures, such as leveling to a target test level at each of a series of frequencies in immunity testing, or performing maximization and quasi-peak measurements at each of a series of frequencies in emissions testing.

The emissions and immunity software packages use pre-configured test sequences to perform measurements and tests. Test sequence setup is dependent on each customer's specific combination of test instruments. On-site training is strongly recommended to train users to manipulate test sequences.

Test results can be displayed in a data table or in single or multiple user-defined graphs (see Figure 2).

Remote control TDK software controls test instruments using the IEEE-488 bus. This allows the software to initialize, change position, and alter settings of test equipment, as well as to read and store data acquired by the equipment. The level of control varies from instrument to instrument, but the software is designed to exploit the remote control capabilities of each test instrument to transfer manual tasks away from the test engineer.

Hardware Requirements

TDK RF Solutions software is sold preinstalled as part of our turnkey test system solutions.

Minimum Test Computer Requirements

- Windows NT 4.0, Windows 2000
- 64 MB RAM
- 10 GB hard drive
- National Instruments GPIB card

GPIB Bus In a TDK test solution, test devices are connected together on an IEEE-488 bus – also known as a General Purpose Interface Bus (GPIB). TDK software controls the test process via this bus, and for the software to function, every software-controlled test device must have a GPIB port and be connected to the bus.

Software Protection Key TDK test system software requires a software protection key and associated driver to be installed on the test computer. The key connects to a PC's parallel port.

Test Instrumentation TDK test system software can be used to control test equipment from a wide variety of manufacturers.

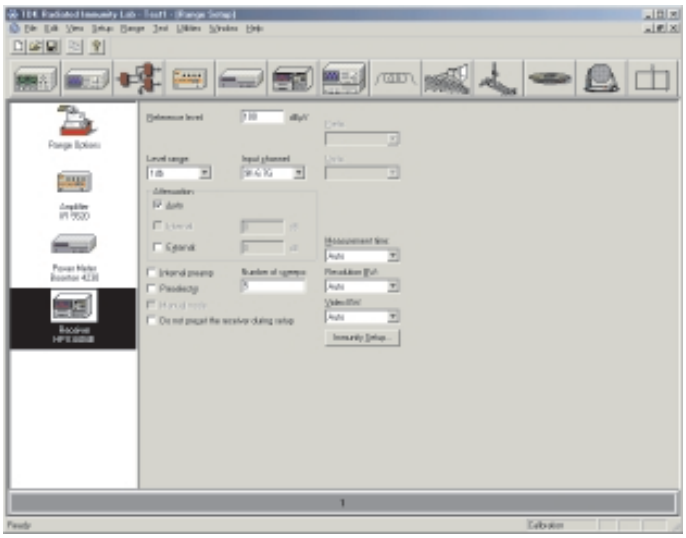


Figure 1: Range Setup Window

TDK TestLab software uses the Range Setup window to configure test equipment options for a test. Once Range Setup options are configured, the user can save the test file to perform the test again at a later time without needing to configure equipment options over again.

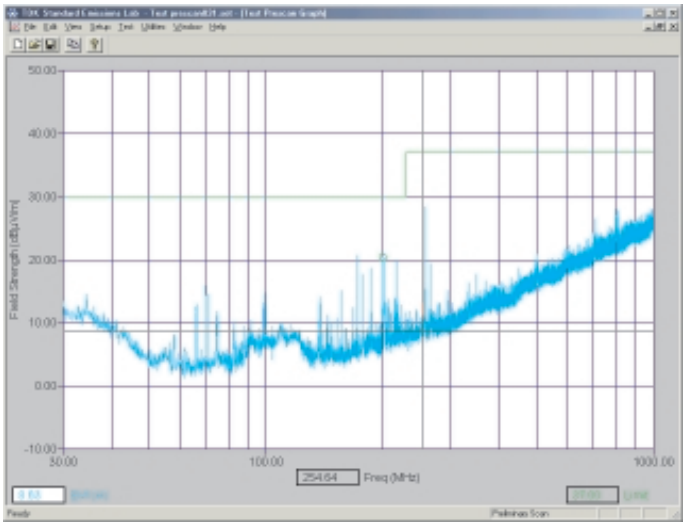


Figure 2: Graph Results

TDK TestLab software graphs test results as data is collected by the test system. TDK TestLab allows users to display multiple graphs, display up to 16 data parameters, use single or dual y-axis display options, zoom, and add/delete color-coded data markers.

SW
SOFTWARE

System Design and Integration

TDK RF Solutions provides integration, installation, and training services to ensure successful implementation of our software products.

System Design, Integration, and Installation Services System design and integration can include updating test instruments to incorporate the latest technologies, tailoring the software for the customer's equipment mix, and adding several TDK products to simplify the test system. One such product is the SI-300 System Interface, which provides remote control of field probes, positioning equipment, and monitoring devices; another is the RSM-02, which provides remote switching capabilities. Test instruments, power and safety controls, and system controls are installed in an ergonomic test console and/or mobile test rack.

On-site Training Training services include installation, configuration, and on-site training by TDK technical staff. Training of test engineers and/or technicians consists of interactive "hands-on" sessions, during which the functions of the software are explained and demonstrated, and the users learn to operate each module of the test system.

Added Value with TDK Test Software

By providing software as a part of our turnkey EMI/EMS system solutions, TDK RF Solutions offers complete, integrated solutions from a single vendor.

Additional Information

TDK TestLab™ Modules:

Emissions Lab (EMI-Lab)
Radiated Immunity Lab (R-EMS Lab)
Conducted Immunity Lab (C-EMS Lab)
EUT Monitoring Lab (EUT-M Lab)
Antenna Lab (APM Lab)

To learn more about TDK RF Solutions products please contact your TDK sales representative:

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